THE AUK:

A QUARTERLY JOURNAL OF

ORNITHOLOGY.

VOL. XVIII. JULY, 1901. No. 3.

BENDIRE'S THRASHER.

BY HERBERT BROWN.

BENDIRE'S THRASHER (*Harporhynchus bendirei*) differs materially from its cactus haunting kin. Beyond the structure and composition of the external nests they have but little in common. Its habitat in Arizona is confined largely to the central southern portions of the Territory. It seldom or never leaves the flat country for the rough and barren hills as do the *H. palmeri*. They are smaller, prettier, less common, migratory and strangely silent. At rare intervals, when disturbed from their nest, I have heard them *tirup*, *tirup*, *tirup* in a sort of reproachful disapproval of being molested, but it could be a delightful songster if it would. Once, and only once, I heard one in a grand outburst of song. I had to positively convince myself that I was not mistaken, and I was not. I then realized that if unsung melodies were sweet, this feathered grace would queen the plains.

During the winter months an occasional one can be found in their usual habitat, but, as a whole, they go south bodily on the first fall storm of wind or rain. The return migration is more gradual, but always of uncertain date. I have known the difference of a full month to exist in their homecoming in two succeeding years. This was probably due to climatic conditions further south. I infer this from the fact that the latest arrival of which I have record was made during an early spring in southern Arizona.

The first week in March will frequently find them nesting, and the middle of April preparations for a second brood are well under way, but, taken over a long series of years, the beginning of April generally sees them busy with their first house making. I have never been able to fully determine the exact number of families raised by one pair of birds during a season. Of two there can be no question, but a third is in doubt, although I have known the nesting season to last three full months and a half. To be more exact, February 24 is the earliest and July 18 the latest record I have in mind for one year. February 9 is the date of their earliest known arrival, but at that time they were gathered in small flocks and were not mated.

With rare exceptions four eggs are the maximum number laid. I have examined probably 500 nests, two only of which contained more. They had five eggs each. Four is not an unusual number, but three is a normal set. The 32 sets of which measurement and descriptions are given can be taken as showing the general average, although they were selected with a view to coloration and size irrespective of the number of eggs to the set.

To the late Major Charles E. Bendire I am indebted for the following measurements and description of the 101 specimens here enumerated.

No. in set, 4	1.11 x .78	1.08 x .78	1.07 x .76	1.08 x .77
" 3	1.10 x .73	1.05 x .73	1.06 x .75	
" 3	.98 x .74	.97 x .72	.97 x .72	
" 3	1.05 x .81	1.01 x .80	1.00 x .81	
" 3	1.01 x .77	1.05 x .78	1.04 x .78	
" 3	1.03 x .81	.99 x .82	1.05 x .82	
" 3	.95 x .73	1.00 x .73	.93 x .71	
" 3	.98 x .78	1.00 x .79	1.01 x .78	
" 3	1.03 x .78	1.02 x .78	1.03 x .78	
" 3	1.02 x .75	1.00 x .75	1.08 x .76	
" 3	1.13 x .77	1.11 x .77	1.11 x .78	
" 4	1.03 x .79	1.06 x .78	1.05 x .79	1.06 x .80
" 3	.99 x .72	1.01 x .73	1.02 x .73	
" 4	1.00 x .78	.99 x .77	.97 x .80	1.02 x .78
" 4	1.06 x .78	1.07 x .77	1.09 x .77	1.03 x .78
" 3	1.14 x .74	1.09 x .77	1.04 x .75	
" 3	1.03 x .80	1.00 x .83	1.05 x .80	
" 4	1.00 x .76	1.01 x .78	1.00 x .78	1.01 x .79

No. in set	3	1.13 x .76	1.10 x .77	1.06 x .78	
"	3	1.02 x .76	1.04 x .76	1.05 x .75	
"	2	1.05 x .75	1.03 x .74		
"	3	1.07 x .79	1.11 x .78	1.09 x .80	
"	3	1.12 x .78	1.12 x .77	1.05 x .78	
"	2	1.15 x .79	1.16 x .77		
"	3	1.03 x .77	1.07 x .78	1.02 x .76	
"	3	1.08 x .77	1.05 x .78	1.08 x .73	
"	3	1.10 x .81	1.10 x .83	1.10 x .81	
"	4	.90 x .75	.92 x .75	.97 x .75	.92 x .73
"	4	1.13 x .81	1.10 x .81	1.12 x .83	1.10 x .81
"	3	.96 x .74	1.04 x .77	.96 x .73	
"	2	1.20 x .80	1.17 x .79		
"	4	1.14 x .77	1.11 x .77	1.16 x .77	1.16 x .77

Average size of above 101 specimens, 1.05 x 0.75 inches. A further measurement of 47 additional specimens, making a total of 148, gave an average size of 1.03 x .75.

The ground color in the majority of the 148 specimens varies from a pale gray green to a greenish white, the former predominating. In a single set it is a clear pale green with a bluish tinge. Most of the eggs are irregularly spotted and blotched with well defined markings of tawny ecru drab, fawn color and vinaceous buff. These markings are generally heaviest about the larger end of the egg; in some specimens the spots run longitudinally. In this type about three fourths of the eggs examined can be included. They resemble, in the style of marking, the eggs of *Mimus polyglottos*, somewhat, although the eggs themselves look quite different. In about 20 per cent. the ground color is somewhat clouded over and partially obscured by the markings, which are finer, less pronounced, giving the egg a uniform pearl gray and pale greenish gray appearance till closely looked at. In an occasional specimen, the markings are simply fine pinpoints, as in the smaller spotted eggs of *Harporhynchus rufus*.

In about five per cent. of the eggs, the ground color is grayish or pinkish white with scarcely a trace of green, and the egg is heavily and uniformly spotted with longitudinal markings of pale salmon color and lavender, bearing a striking resemblance to some eggs of *Myiadestes townsendi*, excepting in size. A single egg has a distinct wreath about the larger end.

The shape of these eggs varies a great deal, the most common form being an elongate ovate, varying from this to ovate, short ovate and elliptical ovate.

The nest is small and daintily constructed by comparison with those of other thrashers. It is less compactly built than that of *H. palmeri*, but the manner of construction is common to all Arizona thrashers. There is an external nest of sticks, few or many, the nest proper of grass and lined with any soft material conveniently obtainable. I have measured at least 200 of them, of which the following may be taken as a fair sample. They are from my field notes and are largely without selection.

Nest in tasaja, 40 inches from the ground to the top of the nest. It has a light frame of sticks, the nest proper being made of green grass, lined with horse hair, rootlets and feathers. External diameter 6 inches, depth $3\frac{1}{2}$ inches. Inside, across the top, 3 inches, depth 3 inches, bottom ovate. This nest contained three eggs.

Nest in cholla, 36 inches from the top of the nest to the ground. But few twigs were used in its construction, the bulk of the material being dried grass. External diameter 6 inches, depth 5 inches. Inside, across the top, $3\frac{1}{2}$ inches, bottom 3 inches, depth $3\frac{1}{2}$ inches. It contained three eggs.

Nest in fork of tasaja, about 4 feet to the top of the nest from the ground. A few twigs on the outside, apparently to give strength, the nest proper being made of and lined with dried wire grass. External diameter, across the top, 6 inches, depth to point of fork $7\frac{3}{4}$ inches. Inside across the top, $3\frac{1}{2}$ inches, across the bottom $2\frac{3}{4}$ inches, average depth 2 inches, corners rounded. It contained four eggs.

Nest in cholla, $2\frac{1}{2}$ feet to the top of the nest from the ground. This nest is supported by an upright branch, against which no sticks have been placed, but they were built against the opposite side of the nest. The nest proper was made of dried grass and lined with a few feathers. Outside measurement, across the top, 7 inches, depth 5 inches. Inside, across the top, $3\frac{1}{2}$ inches, depth $2\frac{1}{4}$ inches, bottom ovate. This nest contained four eggs. They were very small and finely marked.

Nest on west side of a low bushy cholla, near the top. It is

built against a large arm of the bush from which the thorns have been broken off. The sticks, as usual in such cases, have been placed on the opposite side of the nest from the branch against which it has been built. Outside diameter 7 inches, depth $3\frac{1}{2}$ inches. Inside, across the top, $3\frac{3}{8}$ inches, across the bottom $2\frac{1}{2}$ inches. It contained four green eggs faintly blotched with brown.

Nest in tasaja, about 4 feet from the top to the ground. The external stick nest is unusually large. It extends above the grass, of which the inside nest is constructed, 4 inches on one side and $2\frac{3}{4}$ inches on the other, with a narrow opening on the south side through which the birds enter and leave the nest. Outside diameter 12 x $8\frac{1}{2}$ inches, depth 11 inches. Inside, across the top of the grass nest, 3 inches, depth of same $1\frac{1}{2}$ inches. Eggs three, very small.

Nest in tasaja, $4\frac{1}{2}$ feet to the top of the nest from the ground. Nest placed under an arm of the bush near the top. Outside diameter, across the sticks, 10 inches, depth $6\frac{1}{2}$ inches. The stick nest reaches about 2 inches above the nest proper. The diameter across the top of inside nest is $3\frac{1}{2}$ inches, bottom 3 inches. Lined with grass, wool and fibrous bark. It contained two pinkish colored eggs.

Nest on north side of a slender tasaja, 3 feet 8 inches from the ground to the top of the nest. Outside nest is made of creosote and thorn twigs. Outside diameter is $7\frac{1}{2}$ x 6 inches, depth $5\frac{1}{2}$ inches. Inside, across the top, $3\frac{1}{2}$ x $3\frac{1}{4}$ inches, and 3 inches deep. Bottom ovate. It contained four eggs. In shape and markings they had the appearance of being diminutive eggs of the Gambel Quail.

Nest in tasaja, about 30 inches from the ground to the top of the nest. Outside nest made of light thorn twigs, inside of grass and lined with rootlets and hair. Outside diameter $5\frac{1}{4}$ inches, depth 4 inches. Inside diameter across the top $3\frac{1}{2}$ inches, bottom drawn in and rounded to $2\frac{1}{2}$ inches, depth 2 inches. It contained four eggs.

Nest in tasaja, 22 inches from the ground to the top of the nest. Outside nest is made of sticks, inside of grass and lined with rootlets and feathers. Outside diameter 7 x $5\frac{1}{2}$ inches. Inside nest, across the top, $2\frac{1}{4}$ inches, depth $1\frac{1}{2}$ inches. The bottom was thickly padded with fine grass. It contained two eggs.

Nest built on north side of a flowering tasaja, about 5 feet above the ground. It was placed on the top of an old nest. Outside diameter 7 inches, but drawn in to about 5 inches near the top, depth 9 inches. Inside, across the top, $3\frac{1}{2}$ inches, bottom 3 inches, depth $1\frac{3}{4}$ inches. It contained three eggs.

This nest is a flimsy concern. It is hung in the arms of a cholla about 4 feet from the ground. Outside measurement 7 x 5 inches. Inside, across top and bottom, $3\frac{1}{2}$ inches, depth $2\frac{1}{2}$ inches. Sides of the nest thin and open. It was sparsely lined with dry wire grass. It contained three eggs.

Nest in cholla about 50 inches from the ground. It was made of sticks, green weeds and grass, and lined with rootlets and feathers. The top diameter of the nest cavity is $3\frac{1}{4}$ inches, depth $1\frac{1}{2}$ inches, bottom oval. This nest contained three eggs and is curiously constructed.

Nest in cholla, about 5 feet to the top of the nest, from the ground. It is made of sticks, lined with grass, grass roots and feathers. Outside diameter 6 inches, depth 4 inches. Inside diameter, across the top, 3 inches, depth $1\frac{1}{2}$ inches, sides straight, bottom flat. It contained 3 eggs, large and coarsely marked.

Nest in mesquite tree, about 12 feet from the ground. It is made of sticks lined with grass and the inside bark of dead cactus. The outside measurement across the top is 7 inches, depth 5 inches. Inside measurement, across the top of cavity, $3\frac{1}{2}$ inches, bottom $3\frac{1}{4}$ inches, depth 2 inches. This nest was remarkable from the fact that it contained 5 eggs.

Nest in tasaja, 40 inches from the ground to the top of the nest. The external nest of sticks measured 11 x 7 inches, depth 6 inches, across the top of the cavity $3\frac{3}{4}$ x $3\frac{1}{4}$, across the bottom 3 inches, lined with dead grass, weeds, horsehair and wool. It contained 4 eggs.

Nest in tasaja, about 40 inches to the top of the nest from the ground. Nest made of dead twigs and lined entirely with shredded rope. Outside diameter $6\frac{1}{2}$ inches, depth 4 inches. Inside diameter across the top of cavity $3\frac{1}{2}$ inches, across the bottom 2 inches, depth $2\frac{1}{4}$ inches. This nest contained 3 eggs.

The foregoing will give a fair idea of the size and character of the nests. It will be observed that the larger portion of the nests

are in tasajas. This is a species of cactus for which, for the want of a better name, I am obliged to use that of the Mexicans. The word means "dry or jerked beef" which in color and shape the tasaja somewhat resembles. The spines, although innumerable, are short and the branches spreading and open. The cholla is the characteristic cactus of the desert. It is a mass of barbed spines and is the favorite nesting place of *H. palmeri*, but not of *H. bendirei*. Taking 50 nests in succession 34 of them were placed in tasajas, 11 in chollas, 3 in tesota bushes, 1 in a mesquite tree and one in a willow tree. These results are from the Fort Lowell district. In other sections of country less characteristic of the cacti I have found them largely inclined to tree nesting, but never at any great height from the ground. This was Capt. Bendire's experience also. The highest I ever saw one placed was in a willow about 20 feet up. I also saw one in a tasaja the bottom of which was not more than 6 inches from the ground.

BIRDS OF THE BLACK HILLS.

BY MERRITT CARY.

For several years it had been my desire to take a trip to the western part of the Black Hills — especially to that portion which is bounded on the east by the Timber Reserve, and slopes off gradually to the west and southwest until it merges into the arid sagebrush plains of central Wyoming. In selecting this field I hoped to meet with two distinct faunas, and to be as nearly as possible on the dividing line between the two faunal regions.

Accordingly, the 29th of May, 1899, found me very pleasantly situated at the ranch of an old friend, fourteen miles southeast of Newcastle, Wyo., in a branch of the beautiful Gillette Cañon. The scenery here is picturesque in the extreme, the hills to the eastward being within the Reserve, and clothed with heavy forests of pine; while to the westward the foothills are almost devoid of timber, but covered with a heavy growth of 'wait-a-bit' brush, the uniform greenish-gray color of which contrasts strongly with the red sandstone rocks. To the southwest the Elk Mountain